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COMPLETE LISTING OF ALL CLAIMS, WITH MARKINGS AND STATUS IDENTIFIERS
(Currently amended claims showing deletions by ~~strikethrough~~ and additions by underlining)

1 (currently amended): A human PTH or human PTHrP analogue or a truncated human PTH or human PTHrP analogue or a pharmaceutically acceptable salt thereof that selectively binds to the PTH2 receptor.

2 (currently amended): A human PTH or human PTHrP analogue or a truncated human PTH or human PTHrP analogue or a pharmaceutically acceptable salt thereof according to claim 1 where said analogue is a selective PTH2 receptor agonist.

3 (currently amended): A human PTH or human PTHrP analogue or a truncated human PTH or human PTHrP analogue or a pharmaceutically acceptable salt thereof according to claim 1 where said analogue is a selective PTH2 receptor antagonist.

4 (withdrawn): A method of selectively binding a PTH2 receptor which comprises administering to a patient in need thereof an effective amount of an analogue according to claim 1 or a pharmaceutically-acceptable salt thereof.

5 (withdrawn): A method of selectively eliciting an agonist response from the PTH2 receptor which comprises administering to a patient in need thereof an effective amount of an analogue according to claim 2 or a pharmaceutically acceptable salt thereof.

6 (withdrawn): A method of selectively eliciting an antagonist response from the PTH2 receptor which comprises administering to a patient in need thereof an effective amount of an analogue according to claim 3 or a pharmaceutically acceptable salt thereof.

7 (previously presented): An analogue according to claim 1 wherein said analogue is of formula (I),
$$(R^1R^2)-A^1-A^2-A^3-A^4-A^5-A^6-A^7-A^8-A^9-A^{10}-A^{11}-A^{12}-A^{13}-A^{14}-A^{15}-A^{16}-A^{17}-A^{18}-A^{19}-A^{20}-A^{21}-A^{22}-A^{23}-A^{24}-A^{25}-A^{26}-A^{27}-A^{28}-A^{29}-A^{30}-A^{31}-A^{32}-A^{33}-A^{34}-A^{35}-A^{36}-A^{37}-A^{38}-R^3,$$

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(I)

or a pharmaceutically-acceptable salt thereof wherein
A¹ is a hydrophilic or a lipophilic amino acid;
A² is a lipophilic amino acid;
A³ is a hydrophilic or a lipophilic amino acid;
A⁴ is a hydrophilic amino acid;
A⁵ is a hydrophilic or a lipophilic amino acid;
A⁶ is a hydrophilic amino acid or is deleted;
A⁷ is a hydrophilic or a lipophilic amino acid or is deleted;
A⁸ is a lipophilic amino acid or is deleted;
A⁹ is a hydrophilic amino acid or is deleted;
A¹⁰ is a hydrophilic amino acid or is deleted;
A¹¹ is a hydrophilic or a lipophilic amino acid or is deleted;
A¹² is a hydrophilic or a lipophilic amino acid or is deleted;
A¹³ is a hydrophilic amino acid;
A¹⁴ is a hydrophilic amino acid or is deleted;
A¹⁵ is a lipophilic amino acid or is deleted;
A¹⁶ is a hydrophilic or a lipophilic amino acid or is deleted;
A¹⁷ is a hydrophilic or a lipophilic amino acid or is deleted;
A¹⁸ is a lipophilic amino acid or is deleted;
A¹⁹ is a hydrophilic or a lipophilic amino acid or is deleted;
A²⁰ is a hydrophilic amino acid or is deleted;
A²¹ is a hydrophilic or a lipophilic amino acid or is deleted;
A²² is a lipophilic or a hydrophilic amino acid or is deleted;
A²³ is a hydrophilic or a lipophilic amino acid;
A²⁴ is a hydrophilic or a lipophilic amino acid;
A²⁵ is a hydrophilic amino acid;
A²⁶ is a hydrophilic amino acid;
A²⁷ is a lipophilic or a hydrophilic amino acid;
A²⁸ is a lipophilic amino acid;
A²⁹ is a lipophilic or a hydrophilic amino acid;
A³⁰ is a hydrophilic or a lipophilic amino acid;
A³¹ is a lipophilic or a hydrophilic amino acid or is deleted;

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A³² is a hydrophilic amino acid or is deleted;
A³³ is a hydrophilic amino acid or is deleted;
A³⁴ is a lipophilic amino acid or is deleted;
A³⁵ is a lipophilic amino acid or is deleted;
A³⁶ is a lipophilic or a hydrophilic amino acid or is deleted;
A³⁷ is a lipophilic amino acid or is deleted;
A³⁸ is a lipophilic or a hydrophilic amino acid or is deleted;

R¹ and R² are each independently selected from the group consisting of H, (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl-(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl; or one of R¹ or R² is COE¹ where E¹ is (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl; and
R³ is OH, NH₂, (C₁-C₃₀)alkoxy or NH-Y-CH₂-Z, where Y is a (C₁-C₃₀) hydrocarbon moiety and Z is CO₂H or CONH₂;

provided that the compound is not PTH(1-34)R³ (SEQ ID NO:4), PTH(1-35)R³ (SEQ ID NO:5), PTH(1-36)R³ (SEQ ID NO:6), PTH(1-37)R³ (SEQ ID NO:7), or PTH(1-38)R³ (SEQ ID NO:8).

8 (withdrawn): A method of selectively binding a PTH2 receptor which comprises administering to a patient in need thereof an effective amount of an analogue according to claim 7 or a pharmaceutically-acceptable salt thereof.

9 (previously presented): An analogue according to claim 1 of formula (II),

(R¹R²)-A¹-A²-A³-A⁴-A⁵-A⁶-A⁷-A⁸-A⁹-A¹⁰-A¹¹-A¹²-A¹³-A¹⁴-A¹⁵-A¹⁶-A¹⁷-A¹⁸-A¹⁹-A²⁰-A²¹-A²²-A²³-A²⁴-A²⁵-A²⁶-A²⁷-A²⁸-A²⁹-A³⁰-A³¹-A³²-A³³-A³⁴-A³⁵-A³⁶-A³⁷-A³⁸-R³,
(II)

or a pharmaceutically-acceptable salt thereof wherein

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A¹ is Ser, Ala, Dap, Thr, Aib or is deleted;

A² is Val, Leu, Ile, Phe, Nle, β -Nal, Aib, p-X-Phe, Acc, Cha, Met or is deleted;

A³ is Ser, Thr, Aib or is deleted;

A⁴ is Glu, Asp or is deleted;

A⁵ is Leu, Val, Nle, Ile, Cha, β -Nal, Trp, Pal, Acc, Phe, p-X-Phe or is deleted;

A⁶ is Gln, a hydrophilic amino acid or is deleted;

A⁷ is Leu, Val, Nle, Ile, Cha, β -Nal, Trp, Pal, Acc, Phe, p-X-Phe, a lipophilic amino acid, or is deleted;

A⁸ is Met, Nva, Leu, Val, Ile, Cha, Acc, Nle, p-X-Phe, Phe, β -Nal, Bpa, a lipophilic amino acid or is deleted;

A⁹ is His, a hydrophilic amino acid or is deleted;

A¹⁰ is Asn, a hydrophilic amino acid or is deleted;

A¹¹ is Leu, Val, Nle, Ile, Cha, β -Nal, Trp, Pal, Acc, Phe, p-X-Phe, a hydrophilic amino acid or is deleted;

A¹² is Gly, Acc, Aib, or is deleted;

A¹³ is Lys, Arg or HN-CH((CH₂)_nNH-R⁴)-C(O);

A¹⁴ is His or is deleted;

A¹⁵ is Leu, Val, Nle, Ile, Cha, β -Nal, Trp, Pal, Acc, Phe, p-X-Phe or is deleted;

A¹⁶ is Ser, Asn, Ala, Aib or is deleted;

A¹⁷ is Ser, Thr, Aib or is deleted;

A¹⁸ is Met, Nva, Leu, Val, Ile, Nle, p-X-Phe, Phe, β -Nal, Acc, Cha, Aib or is deleted;

A¹⁹ is Glu, Aib or is deleted;

A²⁰ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²¹ is Val, Leu, Ile, Phe, Nle, β -Nal, Aib, p-X-Phe, Acc, Cha, Met or is deleted;

A²² is Acc, Aib, Glu or is deleted;

A²³ is Trp, Acc, Phe, p-X-Phe, Aib, β -Nal or Cha;

A²⁴ is Leu, Acc, Ile, Val, Phe, β -Nal, Nle, Aib, p-X-Phe or Cha;

A²⁵ is Arg, Lys or HN-CH((CH₂)_nNH-R⁴)-C(O);

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A²⁶ is Arg, Lys or HN-CH((CH₂)_nNH-R⁴)-C(O);

A²⁷ is Lys, Aib, Leu, hArg, Gln, Acc, Arg, Cha, Nle, Ile, Val, Phe, β -Nal, or p-X-Phe, where the Lys is optionally substituted on the ϵ -amino group by an acyl group;

A²⁸ is Leu, Acc, Cha, Ile, Val, Phe, Nle, β -Nal, Aib or p-X-Phe;

A²⁹ is Gln, Acc or Aib;

A³⁰ is Asp, Lys, Arg or is deleted;

A³¹ is Val, Leu, Nle, Acc, Cha, Phe, Ile, β -Nal Aib, p-X-Phe or is deleted;

A³² is His or is deleted;

A³³ is Asn or is deleted;

A³⁴ is Phe, Tyr, Amp, Aib, β -Nal, Cha, Nle, Leu, Ile, Acc, p-X-Phe or is deleted;

A³⁵ is Val, Leu, Nle, Acc, Cha, Phe, Ile, β -Nal Aib, p-X-Phe or is deleted;

A³⁶ is Ala, Val, Aib, Acc, Nva, Abu or is deleted;

A³⁷ is Leu, Val, Nle, Ile, Cha, β -Nal, Trp, Pal, Acc, Phe, p-X-Phe, a lipophilic amino acid, or is deleted;

A³⁸ is Gly, Acc, Aib, or is deleted;

where X for each occurrence is independently selected from the group consisting of OH, a halo and CH₃;

R¹ and R² are each independently selected from the group consisting of H, (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl-(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl;

or one of R¹ or R² is COE¹ where E¹ is (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl; and

R³ is OH, NH₂, (C₁-C₃₀)alkoxy or NH-Y-CH₂-Z, where Y is a (C₁-C₃₀) hydrocarbon moiety and Z is CO₂H or CONH₂;

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n for each occurrence is independently an integer from 1 to 5; and

R⁴ for each occurrence is independently (C₁-C₃₀)alkyl, (C₁-C₃₀)acyl or -C((NH)(NH₂));

provided that the compound is not PTH(1-34)R³ (SEQ ID NO:4), PTH(1-35)R³ (SEQ ID NO:5), PTH(1-36)R³ (SEQ ID NO:6), PTH(1-37)R³ (SEQ ID NO:7), or PTH(1-38)R³ (SEQ ID NO:8).

10 (original): A compound of the formula (III),
(R¹R²)-A¹-A²-A³-A⁴-A⁵-A⁶-A⁷-A⁸-A⁹-A¹⁰-A¹¹-A¹²-A¹³-A¹⁴-A¹⁵-A¹⁶-A¹⁷-A¹⁸-A¹⁹-A²⁰-A²¹-A²²-A²³-A²⁴-A²⁵-A²⁶-A²⁷-A²⁸-A²⁹-A³⁰-A³¹-A³²-A³³-A³⁴-A³⁵-A³⁶-A³⁷-A³⁸-R³,
(III)

or a pharmaceutically-acceptable salt thereof wherein

A¹ is Ser, Ala, Dap, Thr, Aib or is deleted;

A² is Val, Leu, Ile, Phe, Nle, β-Nal, Aib, p-X-Phe, Acc, Cha, Met or is deleted;

A³ is Ser, Thr, Aib or is deleted;

A⁴ is Glu, Asp or is deleted;

A⁵ is Leu, Val, Nle, Ile, Cha, β-Nal, Trp, Pal, Acc, Phe, p-X-Phe or is deleted;

A⁶ is Gln, a hydrophilic amino acid or is deleted;

A⁷ is Leu, Val, Nle, Ile, Cha, β-Nal, Trp, Pal, Acc, Phe, p-X-Phe, a lipophilic amino acid, or is deleted;

A⁸ is Met, Nva, Leu, Val, Ile, Cha, Acc, Nle, p-X-Phe, Phe, β-Nal, Bpa, a lipophilic amino acid or is deleted;

A⁹ is His, a hydrophilic amino acid or is deleted;

A¹⁰ is Asn, a hydrophilic amino acid or is deleted;

A¹¹ is Leu, Val, Nle, Ile, Cha, β-Nal, Trp, Pal, Acc, Phe, p-X-Phe, a hydrophilic amino acid or is deleted;

A¹² is Gly, Acc, Aib, or is deleted;

A¹³ is Lys, Arg or HN-CH((CH₂)_nNH-R⁴)-C(O);

A¹⁴ is His or is deleted;

A¹⁵ is Leu, Val, Nle, Ile, Cha, β-Nal, Trp, Pal, Acc, Phe, p-X-Phe or is deleted;

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A¹⁶ is Ser, Asn, Ala, Aib or is deleted;

A¹⁷ is Ser, Thr, Aib or is deleted;

A¹⁸ is Met, Nva, Leu, Val, Ile, Nle, p-X-Phe, Phe, β -Nal, Acc, Cha, Aib or is deleted;

A¹⁹ is Glu, Aib or is deleted;

A²⁰ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²¹ is Val, Leu, Ile, Phe, Nle, β -Nal, Aib, p-X-Phe, Acc, Cha, Met or is deleted;

A²² is Acc, Aib, Glu or is deleted;

A²³ is Trp, Acc, Phe, p-X-Phe, Aib, β -Nal or Cha;

A²⁴ is Leu, Acc, Ile, Val, Phe, β -Nal, Nle, Aib, p-X-Phe or Cha;

A²⁵ is Arg, Lys or HN-CH((CH₂)_nNH-R⁴)-C(O);

A²⁶ is Arg, Lys or HN-CH((CH₂)_nNH-R⁴)-C(O);

A²⁷ is Lys, Aib, Leu, hArg, Gln, Acc, Arg, Cha, Nle, Ile, Val, Phe, β -Nal, or p-X-Phe, where the Lys is optionally substituted on the ϵ -amino group by an acyl group;

A²⁸ is Leu, Acc, Cha, Ile, Val, Phe, Nle, β -Nal, Aib or p-X-Phe;

A²⁹ is Gln, Acc or Aib;

A³⁰ is Asp, Lys, Arg or is deleted;

A³¹ is Val, Leu, Nle, Acc, Cha, Phe, Ile, β -Nal Aib, p-X-Phe or is deleted;

A³² is His or is deleted;

A³³ is Asn or is deleted;

A³⁴ is Phe, Tyr, Amp, Aib, β -Nal, Cha, Nle, Leu, Ile, Acc, p-X-Phe or is deleted;

A³⁵ is Val, Leu, Nle, Acc, Cha, Phe, Ile, β -Nal, Aib, p-X-Phe or is deleted;

A³⁶ is Ala, Val, Aib, Acc, Nva, Abu or is deleted;

A³⁷ is Leu, Val, Nle, Ile, Cha, β -Nal, Trp, Pal, Acc, Phe, p-X-Phe, a lipophilic amino acid, or is deleted;

A³⁸ is Gly, Acc, Aib, or is deleted;

where X for each occurrence is independently selected from the group consisting of OH, a halo and CH₃;

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R¹ and R² are each independently selected from the group consisting of H, (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl-(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl; or one of R¹ or R² is COE¹ where E¹ is (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl; and

R³ is OH, NH₂, (C₁-C₃₀)alkoxy or NH-Y-CH₂-Z, where Y is a (C₁-C₃₀) hydrocarbon moiety and Z is CO₂H or CONH₂; n for each occurrence is independently an integer from 1 to 5; and

R⁴ for each occurrence is independently (C₁-C₃₀)alkyl, (C₁-C₃₀)acyl or -C((NH)(NH₂));

provided that when A⁸ is not a lipophilic D-amino acid or is not deleted then at least one of A⁶, A⁷, A⁹, A¹⁰, A¹¹ and A¹² is a D-amino acid or at least one of A⁶, A⁷, A⁹, A¹⁰, A¹¹, A¹², A¹³, A¹⁴, A¹⁵, A¹⁶, A¹⁷, A¹⁸, A¹⁹, A²⁰, A²¹ and A²² is deleted; and further provided that when the compound contains a D-amino acid then A³⁶ is deleted.

11 (previously presented) : A compound according to claim 10 wherein said compound is

[D-Nle⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Nle⁸]hPTH(1-34)NH₂,
[D-Leu⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Cha⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Phe⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Nal⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Abu⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Met⁸]hPTH(1-34)NH₂,
[Cha^{7, 11}, D-Met⁸]hPTH(1-34)NH₂,

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[D-Ile⁸]hPTH(1-34)NH₂,
[Cha^{7, 11}, D-Ile⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Ile⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Leu⁸]hPTH(1-34)NH₂,
[Cha^{7,11}, D-Leu⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Val⁸]hPTH(1-34)NH₂,
[Cha^{7, 11}, D-Val⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Val⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Cha⁸]hPTH(1-34)NH₂,
[Cha^{7,11}, D-Cha⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Ala⁸]hPTH(1-34)NH₂,
[Cha^{7, 11}, D-Ala⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Ala⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Phe⁸]hPTH(1-34)NH₂,
[Cha^{7,11}, D-Phe⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Nal⁸]hPTH(1-34)NH₂,
[D-Trp⁸]hPTH(1-34)NH₂,
[Cha^{7,11}, D-Trp⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Trp⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Abu⁸]hPTH(1-34)NH₂,
[Cha^{7,11}, D-Abu⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Nle⁸, Nle¹⁸]hPTH(1-34)NH₂,
[des-Met⁸]hPTH(1-34)NH₂ (SEQ ID NO:18),
[Cha^{7,11}, des-Met⁸]hPTH(1-34)NH₂ (SEQ ID NO:19),
[Cha^{7,11}, des-Met⁸, des-Met¹⁸, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:20),
[des-Met⁸, des-Met¹⁸]hPTH(1-34)NH₂ (SEQ ID NO:21),
[Cha^{7,11}, des-Met⁸, des-Met¹⁸]hPTH(1-34)NH₂ (SEQ ID NO:22),
[des-Met⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:23),
[des-Met¹⁸]hPTH(1-34)NH₂ (SEQ ID NO:24),
[Cha^{7,11}, des-Met¹⁸]hPTH(1-34)NH₂ (SEQ ID NO:25),
[Cha^{7,11}, des-Met¹⁸, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:26),
[D-Nle⁸, des-Met¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[des-Gln⁶, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:27),

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[des-Leu⁷, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:28),
[des-His⁹, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:29),
[des-Asn¹⁰, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:30),
[des-Leu¹¹, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:31),
[des-Gly¹², Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:32),
[des-Lys¹³, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:33),
[des-His¹⁴, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:34),
[des-Leu¹⁵, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:35),
[des-Asn¹⁶, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:36),
[des-Ser¹⁷, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:37),
[des-Glu¹⁹, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:38),
[des-Arg²⁰, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:39),
[des-Val²¹, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:40),
[des-Glu²², Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:41),
[des-Gln⁶, Cha^{7,11}, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:42),
[des-Leu⁷, Nle^{8,18}, Cha¹¹, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:43),
[Cha^{7,11}, des-His⁹, Nle^{8,18}, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:44),
[des-Gln⁶, Cha^{7,11}, D-Nle⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[des-Leu⁷, D-Nle⁸, Cha¹¹, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[Cha^{7,11}, D-Nle⁸, des-His⁹, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[Cha^{7,11}, D-Nle⁸, Nle¹⁸, Tyr³⁴]hPTH(1-31)NH₂,
[Cha^{7,11}, des-Met⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂ (SEQ ID NO:16),
[Cha^{7,11}, D-Nle⁸, des-Met¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[Cha^{7,11}, des-Met⁸, des-His⁹, des-Asn¹⁰]hPTH(1-34)NH₂ (SEQ ID NO:45),
[Cha^{7,11}, des-Ser¹⁷, des-Met¹⁸, des-Glu¹⁹]hPTH(1-34)NH₂ (SEQ ID NO:46),
[D-Met⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Met⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Bpa⁸, Tyr³⁴]hPTH(1-34)NH₂,
[D-Nle⁸, Nle¹⁸, Tyr³⁴]hPTH(7-34)NH₂,
[D-Nle⁸, Nle¹⁸]hPTH(7-34)NH₂ or
[D-Met⁸]hPTH(7-34)NH₂.

12 (previously presented): A compound according to claim 11 wherein said compound is

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[Cha^{7,11}, des-Met⁸, Nle¹⁸, Tyr³⁴]hPTH-(1-34)NH₂ (SEQ ID NO:16),
[Cha^{7,11}, D-Nle⁸, des-Met¹⁸, Tyr³⁴]hPTH-(1-34)NH₂,
[Cha^{7,11}, D-Nle⁸, Nle¹⁸, Tyr³⁴]hPTH-(1-34)NH₂,
[D-Nle⁸, Nle¹⁸, Tyr³⁴]hPTH(1-34)NH₂ or [D-Bpa⁸, Tyr³⁴]hPTH(1-34)NH₂.

13 (currently amended): A human PTHrP analogue of formula (IV) that selectively binds to the PTH2 receptor,

(R¹R²) -A¹-A²-A³-A⁴-A⁵-A⁶-A⁷-A⁸-A⁹-A¹⁰-A¹¹-A¹²-A¹³-A¹⁴-A¹⁵-A¹⁶-A¹⁷-A¹⁸-A¹⁹-A²⁰-A²¹-A²²-A²³-A²⁴-A²⁵-A²⁶-A²⁷-A²⁸-A²⁹-A³⁰-A³¹-A³²-A³³-A³⁴-A³⁵-A³⁶-A³⁷-A³⁸-R³,

(IV)

or a pharmaceutically acceptable salt thereof, wherein

A¹ is Ala, Ser, Dap, Thr, Aib or is deleted;

A² is Val or is deleted;

A³ is Ser, Aib, Thr or is deleted;

A⁴ is Glu, Asp or is deleted;

A⁵ is His, Ile, Acc, Val, Nle, Phe, Leu, p-X-Phe, β-Nal, Aib, Cha or is deleted;

A⁶ is Gln, a hydrophilic amino acid or is deleted;

A⁷ is Leu, Val, Cha, Nle, β-Nal, Trp, Pal, Acc, Phe, p-X-Phe, Aib, a lipophilic amino acid or is deleted;

A⁸ is Leu, Met, Acc, Cha, Aib, Nle, Phe, Ile, Val, β-Nal, p-X-Phe, a lipophilic amino acid or is deleted;

A⁹ is His, a hydrophilic amino acid or is deleted;

A¹⁰ is Asp, Asn, a hydrophilic amino acid or is deleted;

A¹¹ is Lys, Arg, Leu, Cha, Aib, p-X-Phe, Ile, Val, Nle, Acc, Phe, β-Nal, HN-CH((CH₂)_nNH-R⁴)-C(O), a lipophilic D-amino acid, a hydrophilic amino acid or is deleted;

A¹² is Gly, Acc, Aib or is deleted;

A¹³ is Lys, Arg, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A¹⁴ is Ser, His or is deleted;

A¹⁵ is Ile, Acc, Cha, Leu, Phe, Nle, β-Nal, Trp, p-X-Phe, Val, Aib or is deleted;

A¹⁶ is Gln, Aib or is deleted;

A¹⁷ is Asp, Aib or is deleted;

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A¹⁸ is Leu, Aib, Acc, Cha, Phe, Ile, Nle, β -Nal, Val, p-X-Phe or is deleted;

A¹⁹ is Arg, Lys, Aib, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²⁰ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²¹ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²² is Phe, Glu, Aib, Acc, p-X-Phe, β -Nal, Val, Leu, Ile, Nle or Cha;

A²³ is Phe, Leu, Lys, Acc, Cha, β -Nal, Aib, Nle, Ile, p-X-Phe, Val or Trp;

A²⁴ is Leu, Lys, Acc, Nle, Ile, Val, Phe, β -Nal, Aib, p-X-Phe, Arg or Cha;

A²⁵ is His, Lys, Aib, Acc, Arg or Glu;

A²⁶ is His, Aib, Acc, Arg or Lys;

A²⁷ is Leu, Lys, Acc, Arg, Ile, Val, Phe, Aib, Nle, β -Nal, p-X-Phe or Cha;

A²⁸ is Ile, Leu, Lys, Acc, Cha, Val, Phe, p-X-Phe, Nle, β -Nal, Aib or is deleted;

A²⁹ is Ala, Glu, Acc, Aib or is deleted;

A³⁰ is Glu, Leu, Nle, Cha, Aib, Acc, Lys, Arg or is deleted;

A³¹ is Ile, Leu, Cha, Lys, Acc, Phe, Val, Nle, β -Nal, Arg or is deleted;

A³² is His or is deleted;

A³³ is Thr, Ser or is deleted;

A³⁴ is Ala, Phe, Tyr, Cha, Val, Ile, Leu, Nle, β -Nal, Aib, Acc or is deleted;

A³⁵ is Glu, Asp or is deleted;

A³⁶ is Ile, Acc, Cha, Leu, Phe, Nle, β -Nal, Trp, p-X-Phe, Val, Aib or is deleted;

A³⁷ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A³⁸ is Ala, Phe, Tyr, Cha, Val, Ile, Leu, Nle, β -Nal, Aib, Acc or is deleted;

R¹ and R² are each independently selected from the group consisting of H, (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl,

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phenyl-(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl,
hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-
phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl;
or one of R¹ or R² is COE¹ where E¹ is (C₁-C₃₀)alkyl,
(C₂-C₃₀)alkenyl, phenyl(C₁-C₃₀)alkyl, naphthyl(C₁-
C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-
C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-
naphthyl(C₁-C₃₀)alkyl; and
R³ is OH, NH₂, (C₁-C₃₀)alkoxy or NH-Y-CH₂-Z, where Y is
a (C₁-C₃₀) hydrocarbon moiety and Z is CO₂H or CONH₂;
n for each occurrence is independently an integer
from 1 to 5; and
R⁴ for each occurrence is independently (C₁-C₃₀)alkyl,
(C₁-C₃₀)acyl or -C((NH)(NH₂));

provided that the compound is not PTHrP(1-34)R³ (SEQ ID NO:9),
PTHrP(1-35)R³ (SEQ ID NO:10), PTHrP(1-36)R³ (SEQ ID NO:11),
PTHrP(1-37)R³ (SEQ ID NO:12) or PTHrP(1-38)R³ (SEQ ID NO:13),
and further provided that the compound is not [Ile⁵,
Trp²³]PTHrP(1-36) (SEQ ID NO:14) or [Trp²³]PTHrP(1-36) (SEQ ID
NO:15).

14 (original): A compound of formula (V),
(R¹R²)-A¹-A²-A³-A⁴-A⁵-A⁶-A⁷-A⁸-A⁹-A¹⁰-A¹¹-A¹²-A¹³-A¹⁴-A¹⁵-A¹⁶-A¹⁷-A¹⁸-A¹⁹-
A²⁰-A²¹-A²²-A²³-A²⁴-A²⁵-A²⁶-A²⁷-A²⁸-A²⁹-A³⁰-A³¹-A³²-A³³-A³⁴-A³⁵-A³⁶-A³⁷-A³⁸-R³,
(V)

or a pharmaceutically acceptable salt thereof, wherein
A¹ is Ala, Ser, Dap, Thr, Aib or is deleted;
A² is Val or is deleted;
A³ is Ser, Aib, Thr or is deleted;
A⁴ is Glu, Asp or is deleted;
A⁵ is His, Ile, Acc, Val, Nle, Phe, Leu, p-X-Phe, β -Nal, Aib, Cha
or is deleted;
A⁶ is Gln, a hydrophilic amino acid or is deleted;

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A⁷ is Leu, Val, Cha, Nle, β -Nal, Trp, Pal, Acc, Phe, p-X-Phe, Aib, a lipophilic amino acid or is deleted;

A⁸ is Leu, Met, Acc, Cha, Aib, Nle, Phe, Ile, Val, β -Nal, p-X-Phe, a lipophilic amino acid or is deleted;

A⁹ is His, a hydrophilic amino acid or is deleted;

A¹⁰ is Asp, Asn, a hydrophilic amino acid or is deleted;

A¹¹ is Lys, Arg, Leu, Cha, Aib, p-X-Phe, Ile, Val, Nle, Acc, Phe, β -Nal, HN-CH((CH₂)_nNH-R⁴)-C(O), a lipophilic D-amino acid, a hydrophilic amino acid or is deleted;

A¹² is Gly, Acc, Aib or is deleted;

A¹³ is Lys, Arg, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A¹⁴ is Ser, His or is deleted;

A¹⁵ is Ile, Acc, Cha, Leu, Phe, Nle, β -Nal, Trp, p-X-Phe, Val, Aib or is deleted;

A¹⁶ is Gln, Aib or is deleted;

A¹⁷ is Asp, Aib or is deleted;

A¹⁸ is Leu, Aib, Acc, Cha, Phe, Ile, Nle, β -Nal, Val, p-X-Phe or is deleted;

A¹⁹ is Arg, Lys, Aib, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²⁰ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²¹ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A²² is Phe, Glu, Aib, Acc, p-X-Phe, β -Nal, Val, Leu, Ile, Nle or Cha;

A²³ is Phe, Leu, Lys, Acc, Cha, β -Nal, Aib, Nle, Ile, p-X-Phe, Val or Trp;

A²⁴ is Leu, Lys, Acc, Nle, Ile, Val, Phe, β -Nal, Aib, p-X-Phe, Arg or Cha;

A²⁵ is His, Lys, Aib, Acc, Arg or Glu;

A²⁶ is His, Aib, Acc, Arg or Lys;

A²⁷ is Leu, Lys, Acc, Arg, Ile, Val, Phe, Aib, Nle, β -Nal, p-X-Phe or Cha;

A²⁸ is Ile, Leu, Lys, Acc, Cha, Val, Phe, p-X-Phe, Nle, β -Nal, Aib or is deleted;

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A²⁹ is Ala, Glu, Acc, Aib or is deleted;

A³⁰ is Glu, Leu, Nle, Cha, Aib, Acc, Lys, Arg or is deleted;

A³¹ is Ile, Leu, Cha, Lys, Acc, Phe, Val, Nle, β -Nal, Arg or is deleted;

A³² is His or is deleted;

A³³ is Thr, Ser or is deleted;

A³⁴ is Ala, Phe, Tyr, Cha, Val, Ile, Leu, Nle, β -Nal, Aib, Acc or is deleted;

A³⁵ is Glu, Asp or is deleted;

A³⁶ is Ile, Acc, Cha, Leu, Phe, Nle, β -Nal, Trp, p-X-Phe, Val, Aib or is deleted;

A³⁷ is Arg, Lys, HN-CH((CH₂)_nNH-R⁴)-C(O) or is deleted;

A³⁸ is Ala, Phe, Tyr, Cha, Val, Ile, Leu, Nle, β -Nal, Aib, Acc or is deleted;

R¹ and R² are each independently selected from the group consisting of H, (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl-(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl; or one of R¹ or R² is COE¹ where E¹ is (C₁-C₃₀)alkyl, (C₂-C₃₀)alkenyl, phenyl(C₁-C₃₀)alkyl, naphthyl(C₁-C₃₀)alkyl, hydroxy(C₁-C₃₀)alkyl, hydroxy(C₂-C₃₀)alkenyl, hydroxy-phenyl(C₁-C₃₀)alkyl or hydroxy-naphthyl(C₁-C₃₀)alkyl; and

R³ is OH, NH₂, (C₁-C₃₀)alkoxy or NH-Y-CH₂-Z, where Y is a (C₁-C₃₀) hydrocarbon moiety and Z is CO₂H or CONH₂; n for each occurrence is independently an integer from 1 to 5; and

R⁴ for each occurrence is independently (C₁-C₃₀)alkyl, (C₁-C₃₀)acyl or -C((NH)(NH₂));

provided that when A⁸ is not a lipophilic D-amino acid or is not deleted then at least one of A⁶, A⁷, A⁹, A¹⁰, A¹¹ and A¹² is a D-

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amino acid or at least one of A⁶, A⁷, A⁹, A¹⁰, A¹¹, A¹², A¹³, A¹⁴, A¹⁵, A¹⁶, A¹⁷, A¹⁸, A¹⁹, A²⁰, A²¹ and A²² is deleted.

15 (previously presented): A compound according to claim 14 wherein said compound is

[Ile⁵, D-Leu⁸]hPTHrP(1-34)NH₂,
[Ile⁵, D-Leu⁸, Trp²³]hPTHrP(1-34)NH₂,
[Ile⁵, des-Leu⁸, Trp²³]hPTHrP(1-34)NH₂ (SEQ ID NO:47),
[Ile⁵, des-Leu⁸]hPTHrP(1-34)NH₂ (SEQ ID NO:48),
[des-Leu⁸, Trp²³]hPTHrP(1-34)NH₂ (SEQ ID NO:49),
[Ile⁵, des-Leu¹⁸]hPTHrP(1-34)NH₂ (SEQ ID NO:50),
[Ile⁵, des-Leu¹⁸, Trp²³]hPTHrP(1-34)NH₂ (SEQ ID NO:51),
[des-Leu¹⁸, Trp²³]hPTHrP(1-34)NH₂ (SEQ ID NO:52),
[Ile⁵, D-Leu⁸, Glu^{22,25}, Leu^{23,28,31}, Lys^{26,30}, Aib²⁹]hPTHrP(1-34)NH₂,
[Ile⁵, D-Leu⁸, Glu^{22,25}, Trp²³, Lys^{26,30}, Leu^{28,31}, Aib²⁹]hPTHrP(1-34)NH₂,
[Ile⁵, D-Leu⁸, Glu^{22,25,29}, Leu^{23,28,31}, Lys^{26,30}]hPTHrP(1-34)NH₂,
[Ile⁵, D-Leu⁸, Glu^{22,25,29}, Trp²³, Lys^{26,30}, Leu^{28,31}]hPTHrP(1-34)NH₂ or
[D-Leu⁸, Trp²³]hPTHrP(7-34)NH₂.

16 (withdrawn): A method of selectively binding the PTH2 receptor which comprises administering to a patient in need thereof an analogue according to claim 9 or a pharmaceutically acceptable salt thereof.

17 (withdrawn): A method of selectively binding the PTH2 receptor which comprises administering to a patient in need thereof a compound according to claim 10 or a pharmaceutically acceptable salt thereof.

18 (withdrawn): A method of selectively binding the PTH2 receptor which comprises administering to a patient in need thereof a compound according to claim 11 or a pharmaceutically acceptable salt thereof.

19 (withdrawn): A method of selectively binding a PTH2 receptor which comprises administering to a patient in need

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thereof a compound according to claim 12 or a pharmaceutically acceptable salt thereof.

20 (withdrawn): A method of selectively binding a PTH2 receptor which comprises administering to a patient in need thereof an analogue according to claim 13 or a pharmaceutically acceptable salt thereof.

21 (withdrawn): A method of selectively binding a PTH2 receptor which comprises administering to a patient in need thereof a compound according to claim 14 or a pharmaceutically acceptable salt thereof.

22 (withdrawn): A method of selectively binding a PTH2 receptor which comprises administering to a patient in need thereof a compound according to claim 15 or a pharmaceutically acceptable salt thereof.

23 (original): A pharmaceutical composition comprising an analogue according to claim 9 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

24 (original): A pharmaceutical composition comprising a compound according to claim 10 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

25 (original): A pharmaceutical composition comprising a compound according to claim 11 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

26 (original): A pharmaceutical composition comprising a compound according to claim 12 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

27 (original): A pharmaceutical composition comprising an analogue according to claim 13 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

28 (original): A pharmaceutical composition comprising a compound according to claim 14 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

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29 (original): A pharmaceutical composition comprising a compound according to claim 15 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable carrier.

30 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of an analogue according to claim 7, sufficient to inhibit the activation of the PTH2 receptor of said patient.

31 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of an analogue according to claim 9, sufficient to inhibit the activation of the PTH2 receptor of said patient.

32 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of a compound according to claim 10, sufficient to inhibit the activation of the PTH2 receptor of said patient.

33 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of a compound according to claim 11, sufficient to inhibit the activation of the PTH2 receptor of said patient.

34 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of a compound according to claim 12, sufficient to inhibit the activation of the PTH2 receptor of said patient.

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35 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of an analogue according to claim 13, sufficient to inhibit the activation of the PTH2 receptor of said patient.

36 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of a compound according to claim 14, sufficient to inhibit the activation of the PTH2 receptor of said patient.

37 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of a compound according to claim 15, sufficient to inhibit the activation of the PTH2 receptor of said patient.

38 (withdrawn): A method according to claim 30 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

39 (withdrawn): A method according to claim 31 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

40 (withdrawn): A method according to claim 32 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

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41 (withdrawn): A method according to claim 33 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

42 (withdrawn): A method according to claim 34 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

43 (withdrawn): A method according to claim 35 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

44 (withdrawn): A method according to claim 36 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

45 (withdrawn): A method according to claim 37 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.

46 (withdrawn): A method of treating a medical disorder that results from altered or excessive action of the PTH2 receptor, which comprises administering to a patient in need thereof an effective amount of a PTH analogue or a truncated PTH analogue or a pharmaceutically acceptable salt thereof according to claim 1, sufficient to inhibit the activation of the PTH2 receptor of said patient.

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47 (withdrawn): A method according to claim 46 wherein said medical disorder is abnormal CNS functions, abnormal pancreatic functions, divergence from normal mineral metabolism and homeostasis, male infertility, abnormal blood pressure or a hypothalamic disease.